AMENDMENTS TO THE CLAIMS

A detailed listing of all claims that are, or were, in the present application, irrespective of whether the claim(s) remains under examination in the application are presented below. The claims are presented in ascending order and each includes one status identifier. Those claims not cancelled or withdrawn but amended by the current amendment utilize the following notations for amendment: 1. deleted matter is shown by strikethrough; and 2. added matter is shown by underlining.

1. (Currently Amended) A device for measuring an optical break-through which is created in a tissue ~~(6, 14)~~, beneath a tissue surface, by treating laser radiation ~~(2)~~ which a laser surgical unit ~~(1)~~ focuses into a treatment focus ~~(11)~~, said focus being located in the tissue ~~(6, 14)~~, wherein said device [[has]] comprises a detection beam path comprising optics, wherein the optics couple radiation emitted by the tissue ~~(6, 14)~~, from beneath the tissue surface, into the detection beam path, and a detector unit ~~(4, 3, 9; 39, 40, 41; 58, 59, 60)~~ is arranged following the detection beam path, said detector unit ~~(4, 3, 9; 39, 40, 41; 58, 59, 60)~~ generating a detection signal which indicates the spatial extent, ~~and/or~~ position or both of the optical break-through in the tissue ~~(6, 14)~~.

2. (Currently Amended) The device as claimed in Claim 1, ~~characterized by~~ further comprising an illumination radiation source ~~(5, 29, 53)~~, which ~~couples~~ directs illumination radiation into the tissue ~~(14)~~.

3. (Currently Amended) The device as claimed in Claim 2, wherein the ~~source of~~ illumination radiation source ~~is also provided for emission of~~ supplies the treating laser radiation ~~(2)~~.

4. (Currently Amended) The device as claimed in Claim 2 [[or 3]], wherein the ~~source of~~ illumination radiation source ~~(5)~~ and the detection beam path are part of an interferometer structure ~~(3)~~.

5. (Currently Amended) The device as claimed in Claim 4, wherein the interferometer structure ~~(3)~~ comprises a measuring arm and an adjustable reference arm ~~(7, 8)~~, [[with]] and the illumination radiation ~~having~~ has a coherence length, in the direction of light propagation [[on]] and in which the resolution at which the detection signal indicates the spatial extent depends on the coherence length, and wherein interference appears only, if the lengths of the measuring arm and of the reference arm differ by no more than the coherence length.

6. (Currently Amended) The device as claimed in Claim 4 [[or 5]], wherein the ~~source of~~ illumination source radiation focuses the illumination radiation ~~(12)~~ into an illumination focus ~~(11)~~ located in the tissue ~~(14)~~, wherein the position of the illumination focus ~~(11)~~ is adjustable [[so as]] to generate the detection signal.

7. (Currently Amended) The device as claimed in Claim 6, wherein the illumination radiation is coupled into a light path of the treating laser radiation, ~~wherein~~ and further

comprising adjustable optics ~~(26) are provided~~ by which the divergence of the illumination radiation is changeable without changing the divergence of the treating laser radiation.

8. (Currently Amended) The device as claimed in Claim 1,[[2 or 3,]] wherein the detector unit ~~(39, 40, 41)~~ detects the radiation emitted by the tissue by means of confocal imaging.

9. (Currently Amended) The device as claimed in Claim 8, wherein the detector unit generates the detection signal by adjusting the focus of the confocal imaging, preferably along a ray direction of the treating laser radiation.

10. (Currently Amended) The device as claimed in Claim 8 [[or 9]], wherein the optics ~~(39)~~ of the detection beam path have certain light dispersing properties, so that they comprise different focal points ~~(45, 46, 47)~~ during confocal imaging for different spectral regions, wherein the detector unit effects a spectrally selective detection of the radiation recorded in the confocal imaging, ~~in order~~ to generate the detection signal.

11. (Currently Amended) The device as claimed in Claim 10, ~~characterized by~~ further comprising a multi-channel spectrometer ~~(51)~~ for picking up radiation behind a pinhole.

12. (Currently Amended) The device as claimed in Claim[[s]] 2 [[and 10]], wherein the source of illumination radiation ~~(30)~~ comprises a plurality of partial radiation sources, which

are individually operable and have different spectral properties, so that spectral selective sensing is obtained by sequentially operating said partial radiation sources.

13. (Currently Amended) The device as claimed in Claim 1,[[2, or 3,]] wherein the detection beam path ~~(67)~~ has an optical axis ~~(61)~~ which is located obliquely to an optical axis ~~(62, 60)~~ of the treating laser radiation or of illumination radiation.

14. (Currently Amended) The device as claimed in Claims [[13 and]] 2, wherein the source of illumination radiation ~~(53)~~ causes a slit illumination of the tissue ~~(14)~~.

15. (Currently Amended) The device as claimed in Claim 13 [[or 14]], ~~characterized by~~ further comprising a scanning unit ~~(54)~~, by which the position of the optical axis ~~(61)~~ of the detection beam path ~~(67)~~ is adjustable relative to the optical axis ~~(62, 60)~~ of the treating laser radiation or of the illumination radiation.

16. (Currently Amended) The device as claimed in ~~any one of the above Claims~~ Claim 1, wherein the detector unit determines a measure of the spatial extent, the ~~and/or~~ position or both of individual scattering centers, ~~preferably the scattering centers in the cornea of an eye,~~ which are generated by the break-through.

17. (Currently Amended) The device as claimed in ~~any one of the above Claims~~ Claim 1, wherein the detection signal ~~(5)~~ indicates a diameter of a plasma bubble ~~(11)~~, which was generated by an optimal break-through.

18. (Currently Amended) The device as claimed in ~~any one of the above Claims~~ Claim 1, ~~characterized by~~ further comprising a scanning device ~~(21, 54)~~ for scanning the tissue ~~(14)~~.

19. (Currently Amended) A method of measuring an optical break-through which is created in a tissue, beneath a tissue surface, by treating laser radiation, ~~wherein radiation emitted by the tissue, from beneath the tissue surface, is detected and a measure of the spatial extent and/or position of the optical break-through is determined therefrom~~ comprising the steps of:

detecting radiation emitted by the tissue from beneath the tissue surface; and

determining a spatial extent of the optical break through, a position of the optical break through or both of the foregoing from detection of the emitted radiation.

20. (Currently Amended) The method as claimed in Claim 19, wherein the spatial extent, the ~~and/or~~ position or both of scattering centers generated by the optical break-through is determined.

21. (Currently Amended) The method as claimed in Claim 19 [[or 20]], wherein [[the]] observation radiation is ~~irradiated~~ directed into the tissue, and radiation emitted by the tissue in the form of back-reflection is evaluated.

22. (Currently Amended) The method as claimed in Claim[[s]] 20 [[and 21]], wherein the radiation emitted by the tissue is interferometrically detected.

23. (Currently Amended) The method as claimed in Claim 22, wherein [[the]] a position of the radiation emitted by the tissue along an optical axis of detection is determined from [[the]] occurring interference.

24. (Currently Amended) The method as claimed in ~~any one of~~ Claim[[s]] 19 [[to 21]], wherein the radiation emitted by the tissue is detected by ~~means of~~ confocal imaging and the spatial extent is determined by adjusting a focus of said confocal imaging.

25. (Original) The method as claimed in Claim 24, wherein different spectral focal points are generated in confocal imaging by dispersive optics and radiation recorded behind a pinhole is spectrally evaluated.

26. (Currently Amended) The method as claimed in Claim[[s]] 21 [[and 24]], wherein spectrally different radiation is sequentially ~~irradiated~~ directed toward the tissue and the radiation emitted by the tissue is sequentially recorded.

27. (Currently Amended) The method as claimed in Claim 19, wherein the emitted radiation is detected along an optical axis which is oblique relative to an optical axis along which the treating laser radiation or observation radiation is ~~irradiated~~ directed into the tissue.

28. (Currently Amended) The method as claimed in Claim 27, wherein the treatment radiation is ~~irradiated~~ directed into the tissue [[in]] as a slit-shaped ~~manner~~ beam.

29. (Currently Amended) The method as claimed in Claim 27 [[or 28]], wherein ~~the position~~ an angle between the optical axis of detection and the optical axis of irradiation is adjusted ~~in order~~ to obtain information on the spatial extent of the interaction.

30. (Currently Amended) The method as claimed in ~~any one of~~ Claim[[s]] 19 [[to 29]], wherein a measure of the spatial extent of individual scattering centers ~~generated by~~ of the optical break-through is generated.

31. (Original) The method as claimed in Claim 30, wherein a diameter of a plasma bubble is determined.

32. (Currently Amended) A method of measuring a transparent or semi-transparent tissue, wherein illumination laser radiation is focused [[in]] at a focal point in the tissue and the position of the focal point within the tissue is changed, ~~to which end~~ by effecting a

variable deflection of the illumination laser radiation ~~is effected~~, wherein tissue-specific signals induced by said focusing are detected and are assigned to points of measurement whose location in the tissue is respectively defined by the specific position of the focal point, and in that points of measurement are filtered out, thus allowing [[to]] ~~determine~~ determination of the position of boundaries, in the tissue ~~and/or~~ inclusions in the tissue or both.

33. (Original) The method as claimed in Claim 32, wherein target points for a subsequent treatment of the tissue by means of treating laser radiation focused in the tissue are determined by means of the filtered-out points of measurement.

34. (Currently Amended) The method as claimed in Claim 32, wherein the treating laser radiation and the position of the focal point of the illumination laser radiation [[is]] are locally changed by ~~means of~~ the same optical elements ~~means in the tissue, by means of which the position of the focal point of the illumination laser radiation is also changed~~.

35. (Currently Amended) The device as claimed in Claim 34, wherein [[for]] the illumination laser radiation, ~~an illumination radiation source is used, which is also provided~~ arises from the same source used for emission of the treating laser radiation.

36. (Currently Amended) The method as claimed in ~~any one of~~ Claim[[s]] 33 [[to 35]], wherein points of measurement and target points are repeatedly determined, with treating laser radiation being respectively applied to the target points.

37. (Currently Amended) A device for measuring a transparent or semi-transparent tissue, comprising a source of laser radiation ~~(1)~~, a deflecting unit ~~(2)~~, a focusing unit, ~~(3) and~~ a detector unit ~~(8) as well as~~ and a control unit ~~(9)~~ which controls the source of laser radiation ~~(1)~~, the deflecting unit ~~(2)~~ and the focusing unit ~~(3)~~ operably interacting such that illumination laser radiation emitted by the source of laser radiation ~~(1)~~ is sequentially focused [[into]] onto a plurality of focal points ~~(MP)~~ within the tissue ~~(6)~~ by the deflecting unit ~~(2)~~ and the focusing unit ~~(3)~~, wherein the detector unit ~~(8)~~ ~~emits~~ transmits tissue-specific signals ~~(S)~~, ~~which are induced by~~ based on said focusing, to the control unit ~~(9)~~, and said control unit ~~(9)~~ assigns said signals ~~(S)~~ to points of measurement ~~(MP)~~ whose location in the tissue ~~(6)~~ is respectively defined by the position of the focal point, and ~~filters out~~ selects certain of the points of measurement ~~(MP)~~ and thus determines positions of boundaries in the tissue, ~~and/or~~ inclusions in the tissue or both ~~(6)~~.

38. (Currently Amended) The device as claimed in Claim 37, wherein, ~~by means of~~ based on the ~~filtered out~~ selected points of measurement ~~(MP')~~, the control unit ~~(9)~~ determines target points ~~(ZP)~~ for a subsequent treatment of the tissue ~~(6)~~ by ~~means of~~ focused treating laser radiation.

39. (Currently Amended) The device as claimed in Claim 38, wherein the treating laser radiation passes through the deflecting unit ~~(2)~~ and the focusing unit ~~(3)~~.

40. (Currently Amended) The device as claimed in ~~any one of~~ Claim[[s]] 37 [[to 39]], wherein the source of laser radiation ~~(1) is provided for emission of~~ emits both the illumination laser radiation and of the treating laser radiation.

41. (Currently Amended) The device as claimed in Claim 40, ~~characterized by~~ further comprising an energy reducer ~~(7)~~, which is, ~~at times, arranged~~ selectively interposed following the source of laser radiation ~~(1)~~ in the beam path and ~~emits~~ which moderates the treating laser radiation to provide said illumination laser radiation ~~(10)~~.